

**REMARKS IN RESPONSE TO THE OFFICE ACTION:**

Applicants thank the Examiner for the allowance of claims 1–47 and 50–54, as well as the indication of allowable subject matter in claim 49.

Claim 48 stands rejected under 35 U.S.C. § 102 as allegedly being anticipated by U.S. Patent No. 5,619,269 issued to Lee et al. Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 48 in view of the following remarks.

As the Examiner is aware, an anticipation rejection under 35 U.S.C. § 102 is proper only if the cited reference discloses each and every limitation of the claimed invention, arranged exactly as in the claims. Applicants respectfully submit that the Examiner has not shown that the Lee reference satisfies this test because Lee neither discloses nor suggests the use of a ghost-cancellation reference signal composed of a plurality of pseudonoise (“PN”) sequences that are “orthogonal to each other” as that term is defined in the present specification. At page 24, lines 24–26 of the specification, Applicants have explained that “[a] *PN sequence is sequence that is orthogonal to another PN sequence has substantially zero cross-correlation with the other.*” Applicants have further explained that as one example, “reversing the order of a PN sequence is one way to generate another PN sequence, which two PN sequences are orthogonal to each other.”

Notwithstanding the clear definition in the specification, the Examiner appears to contend that Lee’s PN sequences are “orthogonal to each other” simply because one of the four PN sequences in the header has inverted polarity in alternate fields. Applicants respectfully submit, however, that where one PN sequence is formed simply by inverting the polarity of another PN sequence, as in Lee, the two sequences necessarily have an extremely high degree of cross-correlation and by definition cannot be “orthogonal to each other” as required by claim 48. This high degree of cross-correlation is significantly increased in Lee given that only one of the four PN sequences changes polarity in consecutive fields while the other three sequences remain the same from field to field.

Moreover, claim 48 expressly requires that the “data frame header *in each said data frame* includ[e] a respective ghost-cancellation reference signal that is composed of a plurality of PN sequences that are orthogonal to each other.” In other words, claim 48 requires that the



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plurality of PN sequences *within the same header* be orthogonal to each other, not that the corresponding sequences *in consecutive headers* are orthogonal to each other. Consequently, even if the Examiner were correct that the alternating-polarity sequences in consecutive headers in Lee were orthogonal to each other, Lee would still not satisfy the requirement of claim 48 that the PN sequences "in each said data frame" are orthogonal to each other because Lee discloses nothing whatsoever regarding the extent of cross-correlation among the four PN sequences in each header. Because Lee does not disclose or suggest the use of orthogonal PN sequences within each data frame header as claim 48 unambiguously requires, Lee does not anticipate claim 48. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection of claim 48 over Lee under 35 U.S.C. § 102.

The Examiner has stated that claim 49 would be allowable if rewritten in independent form to include the limitations of claim 48. Applicants respectfully submit that in view of the above arguments, claim 49 is allowable as written because it depends from allowable claim 48. Accordingly, Applicants respectfully request that the Examiner indicate the allowance of both claims 48 and 49 in the next paper from the Office.

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The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. §§ 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 01-2508, referencing Order No. 12458.0091.NPUS00.

Applicant respectfully requests that the Examiner directly contact the undersigned representative by telephone to discuss any issues or questions presented by this paper.

Respectfully submitted,

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